

input signal is a speech and voice band signal or an ISDN digital signal, and further judging a signal type of each input signal that is judged as the speech and voice band signal;

(c) dynamically changing a compression scheme of each input signal into a most appropriate compression scheme according to the silence information obtained at the step (a) and the signal type information obtained at the step (b), and compressing each signal using the most appropriate compression scheme;

(d) assembling variable length packets each having a length shorter than that of an ATM cell from signals compressed at the step (c) using the silence information obtained at the step (a) and the signal type information obtained at the step (b);

(e) assembling ATM cells by multiplexing a plurality of the variable length packets assembled at the step (d), and transferring the ATM cells to the ATM network;

(f) receiving input ATM cells from the ATM network and disassembling the input ATM cells into received packets;

(g) disassembling the received packets obtained at the step (f) into received signals;

(h) judging a signal compression scheme of each received signal obtained at the step (g);

(i) expanding each received signal using the signal compression scheme judged at the step (h); and

(j) reproducing silence sections in signals expanded at the step (i) so as to generate STM signals, and transferring the STM signals to the STM network.

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(Amended). A transmitting side device for transferring speech and voice band signals and ISDN (Integrated Services Digital Network) digital signals from an STM (Synchronous Transfer Mode) network to an ATM (Asynchronous Transfer Mode) network, the device comprising:

a silence detection unit for obtaining a silence information by detecting silence sections in input signals entered from the STM network;

a2 a signal type judgment unit for obtaining a signal type information for each input signal by judging whether each input signal is a speech and voice band signal or an ISDN digital signal, and further judging a signal type of each input signal that is judged as the speech and voice band signal;

a signal compression unit for dynamically changing a compression scheme of each input signal into a most appropriate compression scheme according to the silence information obtained by the silence detection unit and the signal type information obtained by the signal type judgement unit, and compressing each input signal using the most appropriate compression scheme;

a packet assembling unit for assembling variable length packets each having a length shorter than that of an ATM cell from signal compressed by the signal compression unit using the silence information obtained by the silence detection unit and the signal type information obtained by the signal type judgment unit; and

an ATM cell assembling unit for assembling ATM cells by multiplexing a plurality of the variable length packets assembled by the packet assembling unit, and transferring the ATM cells to the ATM network.